

- (e) a polynucleotide comprising a nucleotide sequence which has at least 90% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (f) a polynucleotide comprising a nucleotide sequence which has at least 95% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (g) a polynucleotide that hybridizes, under stringent conditions to SEQ ID NO: 1 over the entire length of SEQ ID NO: 1; and,
 - (h) a polynucleotide complementary to the polynucleotide sequence of (a), (b), (c), (d), (e), (f), or (g); and,
- a transcriptional termination sequence.

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24. (Amended) A host cell comprising a DNA construct comprising, as operably associated components in the 5' to 3' direction of transcription:

a promoter functional in a plant cell;


a polynucleotide selected from the group consisting of:

- (a) a polynucleotide comprising a nucleotide sequence encoding the polypeptide of SEQ ID NO: 2;
 - (b) a polynucleotide comprising SEQ ID NO: 1;
 - (c) a polynucleotide comprising a nucleotide sequence which has at least 70% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (d) a polynucleotide comprising a nucleotide sequence which has at least 80% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (e) a polynucleotide comprising a nucleotide sequence which has at least 90% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (f) a polynucleotide comprising a nucleotide sequence which has at least 95% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (g) a polynucleotide that hybridizes, under stringent conditions to SEQ ID NO: 1 over the entire length of SEQ ID NO: 1; and,
 - (h) a polynucleotide complementary to the polynucleotide sequence of (a), (b), (c), (d), (e), (f), or (g); and,
- a transcriptional termination sequence.
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26. (Amended) A plant comprising a cell comprising a DNA construct comprising, as operably associated components in the 5' to 3' direction of transcription:

a promoter functional in a plant cell;

a polynucleotide selected from the group consisting of:

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- (a) a polynucleotide comprising a nucleotide sequence encoding the polypeptide of SEQ ID NO: 2;
 - (b) a polynucleotide comprising SEQ ID NO: 1;
 - (c) a polynucleotide comprising a nucleotide sequence which has at least 70% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (d) a polynucleotide comprising a nucleotide sequence which has at least 80% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (e) a polynucleotide comprising a nucleotide sequence which has at least 90% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (f) a polynucleotide comprising a nucleotide sequence which has at least 95% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (g) a polynucleotide that hybridizes, under stringent conditions to SEQ ID NO: 1 over the entire length of SEQ ID NO: 1; and,
 - (h) a polynucleotide complementary to the polynucleotide sequence of (a), (b), (c), (d), (e), (f), or (g); and,
- a transcriptional termination sequence.

27. (Amended) A method for the alteration of the isoprenoid content in a plant, comprising:

transforming said plant with a construct comprising as operably linked components:

a transcriptional initiation region functional in a plant;

a polynucleotide selected from the group consisting of:

- (a) a polynucleotide comprising a nucleotide sequence encoding the polypeptide of SEQ ID NO: 2;

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- (b) a polynucleotide comprising SEQ ID NO: 1;
 - (c) a polynucleotide comprising a nucleotide sequence which has at least 70% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (d) a polynucleotide comprising a nucleotide sequence which has at least 80% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (e) a polynucleotide comprising a nucleotide sequence which has at least 90% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (f) a polynucleotide comprising a nucleotide sequence which has at least 95% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
 - (g) a polynucleotide that hybridizes, under stringent conditions to SEQ ID NO: 1 over the entire length of SEQ ID NO: 1; and,
 - (h) a polynucleotide complementary to the polynucleotide sequence of (a), (b), (c), (d), (e), (f), or (g); and,
- a transcriptional termination region; and,
- growing said plant, wherein said plant has said alteration of isoprenoid content.
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32. (Amended) A method for producing an isoprenoid compound of interest in a plant cell, said method comprising:

obtaining a transformed plant, said transformed plant having and expressing in its genome:

a primary construct comprising a DNA sequence encoding a polynucleotide comprising a transcriptional initiation region functional in a plant cell operably linked to a polynucleotide selected from the group consisting of:

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- (a) a polynucleotide comprising a nucleotide sequence encoding the polypeptide of SEQ ID NO: 2;
- (b) a polynucleotide comprising SEQ ID NO: 1;
- (c) a polynucleotide comprising a nucleotide sequence which has at least 70% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
- (d) a polynucleotide comprising a nucleotide sequence which has at least 80% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;

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(e) a polynucleotide comprising a nucleotide sequence which has at least 90% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;

(f) a polynucleotide comprising a nucleotide sequence which has at least 95% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;

(g) a polynucleotide that hybridizes, under stringent conditions to SEQ ID NO: 1 over the entire length of SEQ ID NO: 1; and,

(h) a polynucleotide complementary to the polynucleotide sequence of (a), (b), (c), (d), (e), (f), or (g); and,

at least one secondary construct comprising a DNA sequence encoding an isoprenoid enzyme operably linked to a transcriptional initiation region functional in a plant cell; and,

growing said plant, wherein said plant produces said isoprenoid compound of interest.

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34. (Amended) A method for increasing the non-mevalonate isoprenoid biosynthetic flux in a cell from a plant, said method comprising:

transforming said plant with a construct comprising as operably linked components:

a transcriptional initiation region functional in a plant;

a polynucleotide selected from the group consisting of:

(a) a polynucleotide comprising a nucleotide sequence encoding the polypeptide of SEQ ID NO: 2;

(b) a polynucleotide comprising SEQ ID NO: 1;

(c) a polynucleotide comprising a nucleotide sequence which has at least 70% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;

(d) a polynucleotide comprising a nucleotide sequence which has at least 80% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;

(e) a polynucleotide comprising a nucleotide sequence which has at least 90% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;

(f) a polynucleotide comprising a nucleotide sequence which has at least 95% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
(g) a polynucleotide that hybridizes, under stringent conditions to SEQ ID NO: 1 over the entire length of SEQ ID NO: 1; and,
(h) a polynucleotide complementary to the polynucleotide sequence of (a), (b), (c), (d), (e), (f), or (g); and,
a transcriptional termination region; and,
growing said plant, wherein said plant has an increased non-mevalonate isoprenoid biosynthetic flux.

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35. (Amended) A method for modulating disease resistance in a plant, comprising:

introducing into said plant, a construct comprising a polynucleotide selected from the group consisting of:

- (a) a polynucleotide comprising a nucleotide sequence encoding the polypeptide of SEQ ID NO: 2;
- (b) a polynucleotide comprising SEQ ID NO: 1;
- (c) a polynucleotide comprising a nucleotide sequence which has at least 70% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
- (d) a polynucleotide comprising a nucleotide sequence which has at least 80% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
- (e) a polynucleotide comprising a nucleotide sequence which has at least 90% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
- (f) a polynucleotide comprising a nucleotide sequence which has at least 95% identity to that of SEQ ID NO: 1 over the entire length of SEQ ID NO: 1;
- (g) a polynucleotide that hybridizes, under stringent conditions to SEQ ID NO: 1 over the entire length of SEQ ID NO: 1; and,
- (h) a polynucleotide complementary to the polynucleotide sequence of (a), (b), (c), (d), (e), (f), or (g); and,

growing said plant, wherein said plant exhibits said modulated disease resistance.